



# ADVANTAGE

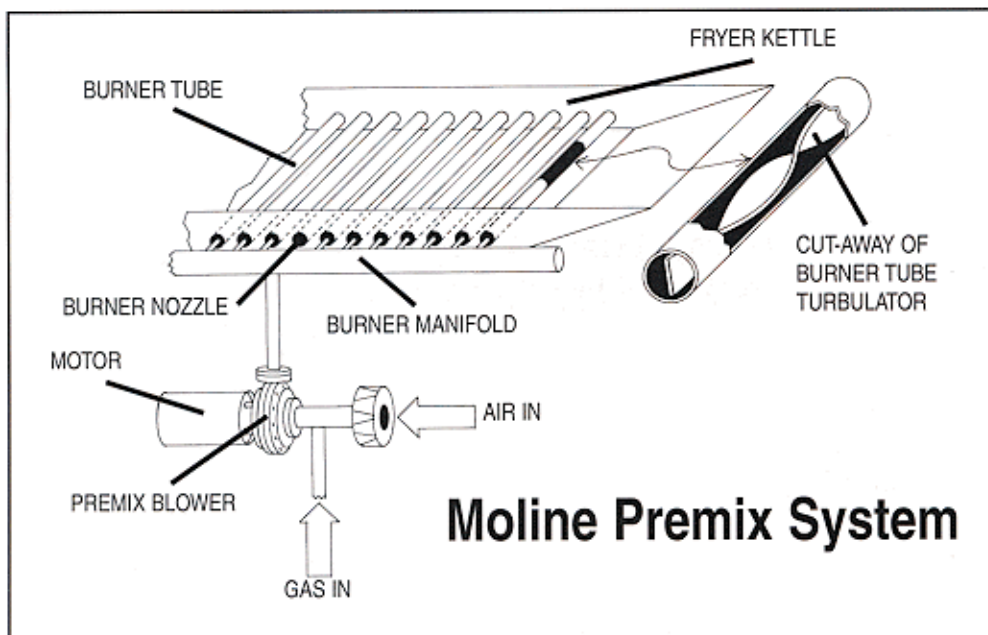
BAKERY TECHNOLOGY UPDATE

FALL 1995

## Gas Frying Technology

The technology behind Moline's gas fryers provide several important and exclusive features. Uniform

independently located to the side of the fryer, with round cross burner tubes running underneath the kettle. Ours is



temperature, sanitary and durable construction, ease of maintenance, control and reliability set Moline apart from the competition.

What are some of the specific benefits of a gas fryer from Moline? It begins with the distribution system...

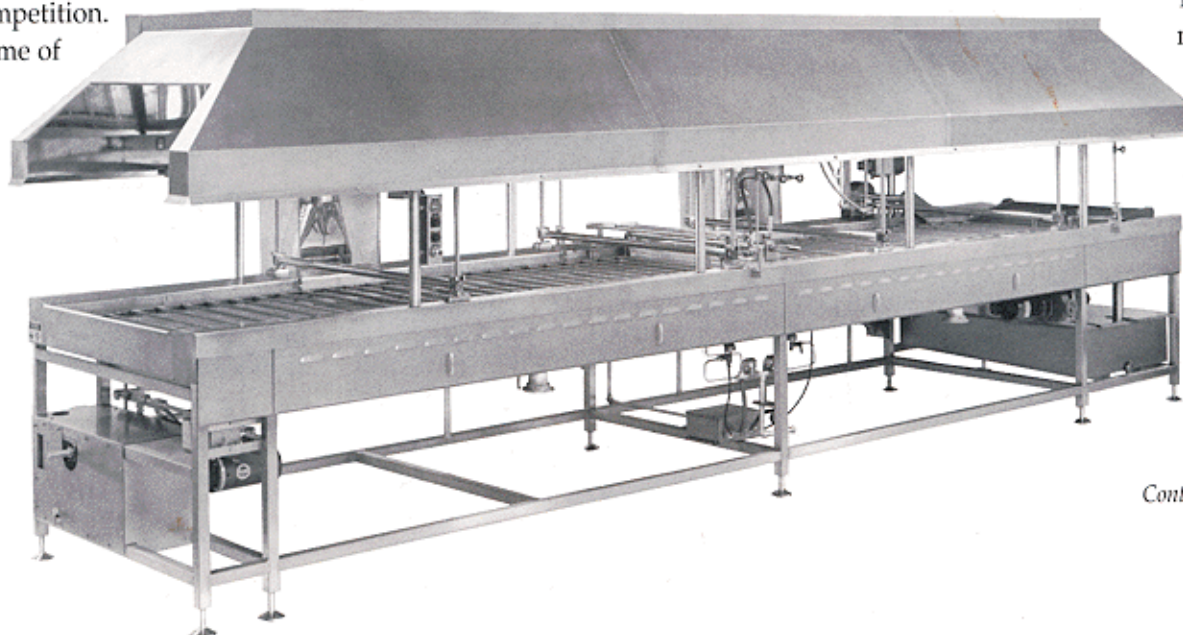
Moline's unique gas distribution system is

the only fryer on the market offering this exclusive design.

The premix blower system utilizes

filtered air to distribute the gas/air mixture to the burner tube manifold. From the manifold, an even amount of the mix is forced through a series of nozzles where combustion occurs.

This creates maximum, safe heat generation and transfer; rapid recovery; and a clean, productive burn. Comparing Moline's



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### In This Issue

#### • Moline Gas Frying Technology

Our Gas Fryers are really something to talk about. Find out more about the technical aspects of our gas frying system, and what makes it so special.

#### • Industrial Frying Team

Experience counts! Meet some of the knowledgeable professionals behind our industrial frying system.





## Gas Frying Technology *cont.*

fryers to those featuring atmospheric burner systems, the advantages of Moline's design are clear. Atmospheric burner systems have a turndown ratio (maximum to minimum burner firing rates) of 2:1. Moline's premix system has a 4:1 ratio, allowing for improved modulation of the firing rate and more uniform temperature control under varying conditions. As "cold" product is introduced into an "empty" Moline fryer, only a very small dip in set point occurs.

In addition, atmospheric systems draw in combustion air right at the burner nozzle, along with any contaminants such as flour or sugar in the air. Due to carbonization of these contaminants, atmospheric burner system nozzles get smaller over time.

Moline burner tubes have been designed with internal flame turbulators (shown on the illustration cut-away). The turbulators cause the burning gas mixture to "scrub" away the boundary layer of insulating air on

the inside of the tubes. Heat transfer is improved, and the tube heat is even and highly efficient as a result.

Tests in the field, corroborating Moline's own testing, indicate that at set point of 375 degrees Fahrenheit, Moline fryer stack temperatures are only 390 degrees Fahrenheit.

The constancy of Moline gas fryer heat is modulated by a control system which senses shortening temperature in two places: pilot side and stack side. The controller for each zone averages these two temperatures. To further increase accuracy, the temperature is sensed near the top surface, where the product is being fried — not down at the bottom of the kettle.

Hood, kettle, frame and burner skirts are constructed of stainless steel. Along with optional remote gas plumbing module and standard power lifting of the main flight conveyor, Moline fryers offer excellent sanitation and durability.

The sheet metal design of the kettle includes a number of "breaks" to give

a high degree of strength and act as points for thermal expansion. Also, our Dual Zone fryers include a kettle drain for each zone, as opposed to one drain for the whole system.

Our flight bars are formed, heavy gauge stainless for superior structural strength. In contrast, single thickness, flat flight bars have a tendency to deform which contributes to product damage.

Moline gas fryers can be designed to fit customers' individual needs. Length can vary from 10 feet to 28 feet, with frying widths of 24 inches to 44 inches. A variety of control options for conveyor speed and fat temperature are available, along with other options.

Precision, safety, sanitation and support "after the sale" mark Moline gas frying systems as among the best in the world. For additional information, contact Gary Moline at (218) 624-5734.

## Moline At BEMA Tech: Showing Off Tri Roll Extruder

Moline Machinery recently returned from the September BEMA Tech show in Las Vegas, Nevada, where baking professionals had the opportunity to view the wares of a multitude of vendors. BEMA Tech follows on the heels of our first-ever participation in a European show, IBA 95, where our new InterFry 36E was displayed.

This time around, Moline displayed our Tri Roll Extruder, used for high volume dough sheet forming on continuous sheeting lines. The show offered Moline a



Tri Roll Extruder

great chance to show and tell our customers (and potential customers) about Moline's commitment to quality, and attention to customer service and support.

Don Moline, President of Moline Machinery, was pleased with the outcome of the show, and commented, "We like to participate in the shows when possible. It provides us the opportunity to catch up with old friends, as well as to share some information on Moline with those who are new to the industry."



# *Industrial Frying Team*

The quality of Moline industrial frying systems is only achieved through the hard work of our team of frying systems professionals. Together, they have over 111 combined years of experience in system design, sales, engineering, installation and start-up services. Thanks to their expertise and dedication, Moline offers our customers excellence in industrial frying systems.



Wayne Hildebrand  
Title: Senior Sales Engineer  
Baking Industry Experience: 35 years  
Specialty: System layouts, processing and formulation



James Dettman  
Title: Senior Project Engineer  
Baking Industry Experience: 3 years  
Specialty: Design engineering



Paul Leuck  
Title: Assembly/Electrician  
Baking Industry Experience: 6 years  
Specialty: Installation/Start-up service



Vince Peterson  
Title: Senior Project Engineer  
Baking Industry Experience: 36 years  
Specialty: Design engineering



Chris Matheson  
Title: Assembly/Machinist  
Baking Industry Experience: 9 years  
Specialty: Installation/Start-up service



Gene Anderson  
Title: Senior Electrical Engineer  
Baking Industry Experience: 22 years  
Specialty: Design Engineering



# Up Close and Personal

Now that you have read about Moline's gas frying technology, see our fully automated industrial frying system and donut production for yourself! Moline's custom-built industrial frying systems offer the largest capacities available worldwide. Learn more about Moline's exclusive features, modular design, quality construction, and complete line of make-up accessories and finishing equipment.

From sheeting, to proofing, to frying and finishing, you can get a close-up view of our complete system in action. To receive a complimentary copy of our frying systems video, call Gary Moline at (218) 624-5734. We would be happy to send you a copy today.

*In the next issue of The Moline Advantage:*

## **Washdown Duty Bakery Equipment**

Dough processing equipment in USDA facilities changed design requirements of traditional bakery machinery radically. See how Moline has met this challenge in the next Advantage.

**24-Hour Technical Service Hotline**  
**(218) 725-2090**



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